all references cited herein are hereby incorporated by reference.

What is claimed is:

Claims

1. An isolated anti-idiotype antibody, wherein said anti-idiotype antibody specifically binds a polypeptide comprising the SC-1 human monoclonal antibody heavy chain sequence set forth in Figure 3 (SEQ ID NO:1).

2. The anti-idiotype antibody of claim 1, wherein said anti-idiotype antibody specifically binds CD 5 positive B lymphocytes.

3. The hybridoma cell line with DSMZ accession number DSM ACC2625.

4. The anti-idiotype antibody expressed by the hybridoma cell line of claim 3.

5. A humanized antibody having the binding specificity of the anti-idiotype antibody of claim 4.

6. The anti-idiotype antibody of claim 4, wherein said anti-idiotype antibody further comprises a detectable agent.

7. A method of generating an immune response in a mammal against the anti-idiotype antibody of claim 4, said method comprising immunizing a mammal with the purified antibody of claim 4 in a pharmaceutically acceptable carrier.

8. The method of claim 6, wherein said anti-idiotype antibody of claim 4 is humanized prior to immunizing said mammal.

9. The method of claim 6, wherein said mammal is a non-human mammal.

10. The method of claim 7 or 8, wherein said immunizing results in cells in said mammal expressing polypeptides that specifically bind to said anti-idiotype antibody.

11. The method of claim 10, wherein said polypeptides are antibodies.

12. The method of claim 6, wherein said method further comprises isolating said cells expressing said polypeptides from said mammal.

13. The method of claim 12, wherein said method further comprises fusing said cells to myeloma cells to generate an antibody-expressing hybridoma cell.

14. The method of claim 13, wherein said method further comprises testing whether said hybridoma cell expresses an antibody that specifically binds the anti-idiotype antibody of claim 4.

15. A method for producing an anti-idiotype antibody in a non-human mammal, said method comprising:

(i) immunizing a non-human mammal with a purified human monoclonal IgM antibody,

(ii) isolating a B lymphocyte from said non-human mammal,

(iii) contacting a non-human myeloma cell from the same species as said non-human mammal with said isolated B lymphocyte under conditions that lead to fusion of said myeloma cell and said B lymphocyte to yield a non-human hybridoma cell,

(iv) culturing said non-human hybridoma cell,

(v) determining whether said non-human hybridoma cell expresses an antibody, and

(vi) determining whether said antibody expressed by said non-human hybridoma cell specifically binds said human hybridoma cell or said human monoclonal IgM antibody expressed by said human hybridoma cell.

16. The method of claim 15, wherein said purified human monoclonal IgM antibody comprises the SC-1 monoclonal antibody heavy chain amino acid sequence of SEQ ID NO:1.

17. The method of claim 15, wherein said non-human mammal is a mouse or a rat.

18. The method of claim 17, wherein said mouse is a BALB/c mouse.

19. The method of claim 15, wherein said non-human mammal is sacrificed within four days after the last immunization with said purified human monoclonal IgM antibody.

20. The method of claim 15, wherein said immunizing comprises an intraperitoneal injection of said purified human monoclonal IgM antibody.

21. The method of claim 15, wherein said immunizing comprises an immunization regimen.

22. The method of claim 15, wherein said purified human monoclonal IgM antibody is obtained from the supernatant of cultured human hybridoma cells, wherein said human hybridoma cells express said human monoclonal IgM antibody.

23. The method of claim 22, wherein said purified monoclonal human IgM antibody is obtained from said human hybridoma supernatant by a method that comprises:

a) affinity chromatography, and/or

b) ion exchange chromatography, and/or

c) gel filtration.

24. The method of claim 15, wherein fusing of said non-human B lymphocyte and said non-human myeloma cells comprises use of polyethylene glycol (PEG).

25. The method of claim 24, wherein said non-human B lymphocyte is a BALB/C mouse B lymphocyte and said non-human myeloma cell is a mouse NS-O myeloma cell.

26. The method of claim 24, wherein said non-human B lymphocytes is a rat B-lymphocyte and said non-human myeloma cell is a rat myeloma cell.

27. The method of claim 15, wherein determining whether said non-human hybridoma cell expresses an antibody comprises use of an enzyme-linked immunosorbent assay.

28. The method of claim 27, wherein said enzyme-linked immunosorbent assay is carried out after 2, 3, 4, or 5 weeks of culturing said non-human hybridoma cell.